IN THE CLAIMS:

Please amend the claims as follows:

1. (original) A feedback-control circuit for color calibration of a diffraction light device, comprising:

at least one diffractive light device (DLD) having a gap distance defined by opposing plates;

at least one sensor configured to convert light modulated by said DLD device into a light signal indicative of said gap;

a controller configured to calculate a voltage correction value based on a difference between said gap as indicated by said light signal and a designer-specified gap value and being further configured to apply a corrected voltage corresponding to said voltage correction value to said DLD device.

2. (original) The control circuit of claim 1, wherein said sensor comprises a photodiode.

3. (currently amended) The control circuit of claim 1, wherein said controller further comprises a gap value converter having an analog-to-digital converter (ADC) and a static lookup table, wherein said ADC is configured to convert signals from said sensor to a digital value ~~and is coupled to said sensor and to said static lookup table~~ and wherein said lookup table is configured to ~~correlate said~~ output an assumed gap value ~~with~~ based on said digital value.

4. (currently amended) The control circuit of claim 1, wherein said controller further comprises an analog-to-digital converter (ADC), a color vector generator, and a static lookup table, wherein said ADC is configured to convert signals from said sensor to a digital value ~~and is coupled to said sensor and to said color vector generator~~, wherein said color vector generator is configured to generate color vectors corresponding to said digital value ~~light modulated by said DLD device~~, and wherein said static lookup table is configured to output an ~~correlate said~~ assumed gap value ~~with~~ based on said color vectors.

5. (currently amended) The control circuit of ~~claim 1~~ claim 4, and further comprising an amplifier coupled to said static lookup table and said designer-specified gap value and being configured to ~~obtain~~ output a voltage correction value by amplifying a difference between said designer-specified gap value and said assumed gap value.

6. (original) The control circuit of claim 5, further comprising a digital to analog converter coupled to said amplifier being configured to convert said voltage correction value to said corrected voltage.

7. (original) The control circuit of claim 5, further comprising an operational lookup table coupled to said amplifier and said designer-specified gap value and being configured to couple said designer-specified gap value and said actual gap value and store said designer-specified gap value and said actual gap value.

8. (currently amended) A feedback-control circuit for color calibration of a diffraction light device, comprising:

at least first, second, and third diffractive light devices (DLD devices) having corresponding gap distances defined between opposing plates;

a plurality of sensors optically coupled to said first, second and third DLD devices and configured to convert light modulated by said DLD devices into a plurality of light signals;

a gap value converter configured to convert said light signals to assumed gap values correlated to said gap distances;

a designer-specified gap value table having a plurality of designer-specified gap values stored thereon in which said designer-specified gap values correspond to said gap distances; and

a controller configured to control said sensors, said gap value converter, and said designer-specified gap value table, and wherein said ~~control circuit~~ controller is configured to calculate voltage correction values based on differences between said assumed gap values and said designer-specified gap values and being further configured to apply corrected voltages corresponding to said voltage correction values to said first, second and third DLD devices.

9. (original) The control circuit of claim 8, wherein said plurality of designer-specified gap values comprises red, blue, and green gap values.

10. (original) The control circuit of claim 8, further comprising a fourth diffractive light device and wherein said plurality of designer-specified values comprises black, red, green, and blue specified gap values.

11. (original) The control circuit of claim 8, wherein said gap value converter comprises a digital gap value converter.

12. (original) The control circuit of claim 8, wherein said controller comprises a microcontroller.

13. (original) A diffractive light device (DLD) system, comprising;

a feedback-control circuit that includes a calibration array having a plurality of DLD devices each having a gap distance defined between opposing plates and wherein said feedback-control circuit is configured to convert light diffracted by said calibration array to assumed gap values corresponding to said gap distances and to calibrate each DLD device by using a voltage correction value based on a difference between said assumed gap value and a corresponding designer-specified gap value;

an operational lookup table coupled to said feedback-control circuit being configured to couple said designer-specified gap values and voltage correction values and store said values thereon;

a human visible array;

an operational control circuit configured to control an operation of said human visible array and to reference said operational lookup table and to calibrate said human visible array by using said voltage correction values.

14. (original) The system of claim 13, wherein said calibration array is offset from said human visible array.

15. (original) The system of claim 13, wherein said calibration array is part of said human visible array.

16. (original) The system of claim 13, wherein said plurality of DLD devices of said calibration array is configured to generate a red, blue, and green color scheme.

17. (original) The system of claim 14, wherein said plurality of DLD devices of said calibration array is configured to generate a black, red, blue, and green color scheme.

18. (original) A method of calibrating a diffractive light device (DLD), comprising: placing first and second opposing plates in a separated position defined by an actual gap distance;

directing light onto said DLD device to modulate that light;

converting modulated light to an assumed gap value;

comparing said assumed gap value to a designer-specified gap value; and

adjusting said assumed gap distance by a distance proportional to a difference between said assumed gap value and said designer-specified gap value.

19. (original) The method of claim 18, wherein placing said first and second plates in said separated position occurs in response to an initial voltage corresponding to said designer-specified gap value being conveyed to said DLD device.

20. (original) The method of claim 18, wherein converting said light to an assumed gap value comprises directing said light through a color filter and onto a light sensor, converting an output of said light sensor into a digital signal, and converting said digital signal into said assumed gap value.

21. (original) The method of claim 20, wherein converting said digital signal into said assumed gap value comprises converting said digital signal to a plurality of color vectors, and comparing said color vectors to a lookup table.

22. (original) The method of claim 20, wherein converting said digital signal into said assumed gap value comprises comparing said digital signal to a lookup table.

23. (original) The method of claim 20, wherein adjusting said actual gap distance comprises amplifying a difference between said assumed gap value and said designer-specified gap value to obtain a voltage correction value, and applying a corrected voltage based on said voltage correction value to said DLD device.

24. (original) The method of claim 23, further comprising correlating and storing said designer-specified gap value and said voltage correction value on an operational lookup table.

25. (currently amended) The method of claim 18, wherein said method is carried on ~~substantially~~ continuously.

26. (original) A method of calibrating a DLD array, comprising:

calibrating a calibration array by operating a calibration feedback-control circuit by placing opposing plates of a plurality of DLD devices in separated positions defined by actual gap distances, directing light onto said DLD devices to diffract light, converting said diffracted light to an assumed gap value, comparing said variable gap value to a designer-

specified gap value to obtain a voltage correction values, applying a corrected voltages to said DLD devices based on said voltage correction values, and storing and correlating said voltage correction values and said designer-specified gap values on an operational lookup table;

providing a plurality of color gap values corresponding to a human visible array; and calibrating said color gap values by referencing said operational lookup table to obtain corrected array values.

27. (original) The method of claim 26, and further comprising converting said corrected array values to corrected array voltages and conveying said color gap voltages to said human visible array.

28. (original) The method of claim 27, wherein said voltage correction value is converted to said corrected voltage by a digital to analog converter and corrected array values are converted to said corrected array voltage by the same digital to analog converter.

29. (original) The method of claim 27, wherein said color gap voltages are conveyed to said human visible array through the use of a multiplexer.

30. (currently amended) The method of claim 26, wherein said calibration feedback-control circuit is operated ~~substantially~~ continuously to update said operational lookup table.

31. (currently amended) A DLD system, comprising:

means for diffracting light based on an actual gap distance;

means for converting detected light values to assumed gap values;

means for comparing said assumed gap values to designer-specified gap values; and

means for adjusting said actual gap distance to minimize the distance between said assumed gap values and said designer-specified gap values.

32. (original) The system of claim 31, and further comprising means for storing said designer-specified gap and for storing a voltage correction value based on a difference between said designer-specified gap value and said assumed gap value.

33. (original) The system of claim 32, and further comprising means for converting said voltage correction value to a correction value.

34. (currently amended) The system of claim 32, and further comprising means for ~~converting~~ adjusting a human visible array based on values stored in said means for storing said ~~for storing said~~ designer-specified gap and for storing said voltage correction value

35. (new) The control circuit of claim 3, and further comprising an amplifier coupled to said static lookup table and said designer-specified gap value and being configured to output a voltage correction value by amplifying a difference between said designer-specified gap value and said actual gap value.

36. (new) The control circuit of claim 35, further comprising a digital to analog converter coupled to said amplifier being configured to convert said voltage correction value to said corrected voltage.